

WE CLAIM:

1. A process for making chewing gum comprising the steps of:
using a single continuous mixing apparatus to perform all of the addition and
5 compounding steps necessary to produce gum base;
adding to the single continuous mixing apparatus all of a group of components
necessary to make a chewing gum base including an elastomer and a plasticizer, wherein
the elastomer is added to the single continuous mixing apparatus separate and apart from
the plasticizer;
10 providing at least two mixing zones in the mixing apparatus;
producing gum base from the mixing apparatus; and
mixing the gum base with other ingredients to produce chewing gum.
2. The continuous process of Claim 1 wherein the at least two mixing zones
15 include a distributive mixing zone and a dispersive mixing zone.
3. The continuous process of Claim 1 wherein an elastomer and a filler are
fed into the mixing apparatus before other components of the chewing gum base.
- 20 4. The continuous process of Claim 1 wherein the mixing apparatus includes
a first dispersive mixing zone.
5. The continuous process of Claim 1 wherein the mixing apparatus is a high
efficiency mixer.
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6. The continuous process of Claim 1 wherein the mixing apparatus includes
a blade-and-pin mixer.
7. The continuous process of Claim 1 wherein the process is carried out in
30 a counter-rotating, intermeshing twin screw extruder.

8. The continuous process of Claim 1 wherein the mixing apparatus includes a plurality of toothed elements counter-rotating with respect to adjacent toothed elements.

9. The continuous process of Claim 1 wherein the gum base components are added to the mixing apparatus at least two spatially separated points.

10. The continuous process of Claim 1 wherein a portion of the chewing gum base components are subjected to a highly dispersive mixing operation prior to a highly distributive mixing operation.

11. The continuous process of Claim 1 wherein the adding and mixing steps are controlled to operate at a steady state.

12. The continuous process of Claim 1 wherein at least some of the components are added to the mixing apparatus at different locations in an order that approximately corresponds to a decreasing order of viscosity.

13. A process for producing chewing gum comprising the steps of:
using a single extruder to perform all necessary addition and compounding steps
to produce gum base;
adding to the single extruder all of a group of components necessary to make a gum base including an elastomer and a plasticizer, wherein the elastomer is added to the extruder separate and apart from the plasticizer;
mixing the components in the single extruder;
producing the gum base using the single extruder; and
adding the gum base to other ingredients to make chewing gum.

14. The continuous process of Claim 13 wherein an elastomer and a filler are fed into the extruder before other components of the gum base.

15. The continuous process of Claim 13 wherein the extruder includes a first dispersive mixing zone.

16. The continuous process of Claim 13 wherein the extruder is a high efficiency mixer.

17. The continuous process of Claim 13 wherein the extruder includes a blade-and-pin mixer.

18. The continuous process of Claim 13 wherein the process is carried out in a counter-rotating, intermeshing twin screw extruder.

19. A process for making chewing gum in a continuous chewing gum production line comprising the steps of:

using a single extruder to perform all of the addition and compounding steps necessary to produce a gum base;

adding to the single extruder components necessary to make a gum base the components including an elastomer and a plasticizer, wherein the elastomer is added to the single continuous mixing apparatus separate and apart from the plasticizer;

producing gum base from the single extruder;

adding the gum base to water-soluble ingredients; and
mixing the chewing gum base and water-soluble ingredients to produce chewing gum.

20. The continuous process of Claim 19 wherein an elastomer and a filler are fed into the extruder before other components of the gum base.